

HCMG 849: Financial Management of Health Institutions

Fall 2009, MW 3:00-4:20, 250 JMHH

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Office: MW 4:30-6:00 or appt.

Prerequisite: Finance 601 or an equivalent

Overview

This course focuses on the application of financial analysis to investment, financing, and operating decisions in the health care sector. Analytical methods covered include expected net present value analysis; decision tree and real option valuation; discounted cash flow, comparable firm, and venture capital valuation; and product-line performance evaluation. Cases dealing with the biotechnology / pharmaceutical, medical device, health insurance / managed care, and hospital subsectors allow students to apply these methods. Each case is accompanied by background on relevant institutions and markets.

The six assigned cases examine the following decisions/situations:

1. Estimating the value of a drug in development using traditional expected NPV valuation
2. Estimating the value of a drug in development using decision tree analysis and option pricing
3. Estimating the value of a publicly-traded medical device company
4. Analyzing the best private equity deal structure for recapitalizing a entrepreneurial specialty pharmaceutical company
5. Evaluating profitability of different customer cohorts and associated strategy for a Medicare managed care organization
6. Evaluating product-line profitability and strategic financial alternatives for a health system

The approximate breakdown of the course by sector / subject is:

- A. Pharmaceuticals, biotechnology, and devices (\approx 16 sessions)
 1. Valuing products in development – Cases 1 & 2
 2. Valuing companies with revenue-generating products – Case 3
 3. Funding startups and young companies – Case 4
- B. Payors and providers (\approx 7 sessions)
 1. Health care financing organizations – Case 5
 2. Hospitals – Case 6

Web-Café room

The cases and readings will be posted in the course Web-Café room. A copy of the lecture slides usually will be distributed in class. The slides will be posted on Web-Café after class.

Case teams, write-ups, and presentation

Groups of **three or four** students should assemble to form a case team. Each team will be responsible for submitting 5 case write-ups and presenting one case in class. A case write-up should consist of no more than 6 pages of text, with as many supporting exhibits and figures as needed. The written report should address the suggested discussion questions that are included with each case, as well as any additional issues that the team regards as important and/or interesting.

A team's oral presentation should take about 20 minutes. Each member is required to participate. The presenting team should turn in its slides/overheads and **may** also turn in a write-up if the presentation slides will not fully reflect adequately the team's analysis.

The lowest written case grade will be dropped (but not the grade for the case the team presents). **Twenty-five percent** of each member's grade will be determined by teammate evaluations.

Exam

A closed-book exam will be given in class on November 23. This exam may be made up subject to University rules for making up a final examination. If necessary, the makeup exam will be given at 12 pm, Dec. 15 (the final examination time for MW classes beginning at 3:00).

Course grade

	<u>Percentage of grade</u>
Case write-ups	40%
Case presentation	15%
Class participation	20%
Exam (November 23 in class)	25%

Protocol

- Attendance is important, **including all case dates**.
- No laptops, PDAs, cell phones, etc. during class please.
- There will be a seating chart. Stick with it.

Date	Topic	Reading
Sept. 9	R&D intensity and the development process	<div>1. Public biotech 2008 – The numbers</div> <div>2. Returns on research and development for 1990s new drug indications</div> <div>3. The cost of biopharma R&D: Is biotech different?</div> <div>4. Measuring pharmaceutical industry risk and the cost of capital (skim)</div> <div>• How much cash does your company need?</div> <div>5. R&D leverage and the risk-return staircase</div> <div>6. Valuing pharma R&D: The catch-22 of DCF</div> <div>7. Getting real about valuations in biotech</div> <div>8. The economics of licensing contracts</div>
Sept. 14	Financing R&D; cash flows and risks	
Sept. 16	Expected NPV and cost of capital	
Sept. 21	Case 1 due: Estimating the expected net present value of a drug in development	
Sept. 23	Valuing real options with decision tree analysis	
Sept. 28	Valuing real options with methods used for options on traded assets	
Sept. 30	More on financing through licensing / alliances	
Oct. 5	Case 2 due: Valuing a drug using option pricing	
Oct. 7	Guest Speaker – Valuing licensing deals, Jay Mohr, Managing Director, Locust Walk Partners	<div>9. <i>Who is my peer? A valuation based approach to the selection of comparable firms (skim)</i></div>
Oct. 12	Valuation of R&D intensive companies	
Oct. 14	Guest speaker – Valuing companies, Michael Aberman, Credit-Suisse, Equity Research	
Fall & “recruiting” break		
Oct. 26	Guest speaker – Mergers and acquisitions, Mark Page, Managing Director, Leerink Swann	
Oct. 28	Case 3 due: Medtronic/Kyphon	
Nov. 2	Guest Speaker -- Venture capital finance, Geoff Meyerson, Locust Walk Partners	<div>10. Beyond the biotech IPO: a brave new world</div> <div>11. A better prescription for drug-development financing</div> <div>12. The rise of venture capital and biotech in the US and Europe</div>
Nov. 4	Guest Speaker – Collaborative financing, Jeffrey Edelman, Principal, Symphony Capital	
Nov. 9	Case 4 due: Healthcare Co. deal structure	
Nov. 11-16	Background on health care financing organizations, risk selection, and performance evaluation	<div>13. Self-funded health insurance</div> <div>14. Medicare Advantage: Private health plans in Medicare</div>
Nov. 18	Case 5 due: Plan design and risk management in the Medicare HMO market	
Nov. 23	EXAM	
Nov. 30	Background on the hospital sector and performance evaluation	<div>15. The pricing of U.S. hospital services . . .</div> <div>16. Whistling past the graveyard . . .</div>
Dec. 2	Guest speaker – Health system finance, Michael Dandorff, Senior VP of Business Development, U of PA Health System	
Dec. 7	Guest speaker – Hospital credit risk, David Peknay, S&P Poor’s	
Dec. 9	Case 6 due: Product line profitability for a health system	

Assigned readings, posted on Web-Café

1. B. Hugget, G. Hodgson, R. Lahteenmaki, 2007, Public Biotech in 2008 – the Numbers, *Nature Biotechnology* 27: 710-721.
2. H. Grabowski, J. Vernon, and J. DiMasi, 2002, Returns on Research and Development for 1990s New Drug Introductions, *Pharmacoeconomics* 20 Suppl. 3: 11-29.
3. J. DiMasi and H. Grabowski, 2007, The Cost of Pharmaceutical R&D: Is Biotech Different? *Managerial and Decision Economics* 28: 469-479.
4. S. Myers and Shyam-Sunder, Measuring Pharmaceutical Industry Risk and the Cost of Capital, in R. Helms, ed., *Competitive Strategies in the Pharmaceutical Industry*. Washington, D.C.: American Enterprise Institute, 1996. (Skim)
5. S. Myers and C. Howe, 1997, R&D Leverage and the Risk-Return Staircase, Appendix C in A Life Cycle Financial Model of Pharmaceutical R&D, MIT.
6. R. Villiger and B. Bogdan, 2005, Valuing Pharma R&D: The Catch-22 of DCF, *Journal of Applied Corporate Finance* 17: 113-116.
7. R. Villiger and B. Bogdan, 2005, Getting Real About Valuations in Biotech, *Nature Biotechnology* 23: 423-428.
8. R. Mason, N. Savva & Stephen Scholtes, The Economics of Licensing Contracts, *Nature Biotechnology* 26: 855-857.
9. Bhojraj and Lee, 2002, Who is My Peer? A Valuation Based Approach to the Selection of Comparable Firms, *Journal of Accounting Research* 40: 407-439.
10. B. Booth, 2009, Beyond the Biotech IPO: a Brave New World, *Nature Biotechnology* 27: 705-709.
11. M. Kessel and F. Frank, 2007, A Better Prescription for Drug-Development Financing, *Nature Biotechnology* 25: 859-866.
12. D. Lee and M. Dibner, 2005, The Rise of Venture Capital and Biotechnology in the US and Europe, *Nature Biotechnology* 23: 672-676.
13. D. Hatfield, 2009, Understanding and Benefiting from Self-Funded Health Insurance, *Workspan*, June 2009.
14. Congressional Budget Office, 2007, Medicare Advantage: Private Health Plans in Medicare, CBO Economic and Budget Brief, June 28.
15. U. Reinhardt, 2006, The Pricing of U.S. Hospital Services: Chaos Behind a Veil of Secrecy, *Health Affairs* 25: 57-69.
16. R. Cimasi, 2008, Whistling Past the Graveyard: The Impact of Regulation on Healthcare Valuation, *Valuation Strategies* 12: 6-19, 47-48.

Assigned and available through Penn Library E-resources, Business Source Premier: R. Passov, 2003, How Much Cash Does Your Company Need? *Harvard Business Review*, pp 1-8.

Supplemental Readings: An annotated list of optional, supplemental readings, some of which may be of interest to some students, is available on *Web-Café*.

Additional background: The textbook *Principles of Corporate Finance*, by Brealey, Myers, and Allen, provides useful background for the first half of the course (8th ed. Chapters 4, 6, 8, 9, 17, 18, 20, 21, 22).